

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1. (currently amended) A method of allocating memory buffer space for traffic of network connections, the method comprising:

designating fixed buffer allocation space, wherein buffers in the fixed buffer allocation space are associated with fixed buffer allocation queue identifications, and wherein the fixed buffer allocation space is associated with a first discard scheme which determines if the traffic will be accepted into the buffers; and

designating prioritized fair share buffer space, wherein buffers in the prioritized fair share buffer space are associated with prioritized fair share queue identifications, wherein none of the buffer space is actually allocated to the fixed buffer allocation space, and all of the buffer space is actually allocated to the prioritized fair share buffer space, and wherein the prioritized fair share buffer space is associated with a second discard scheme which determines if the traffic will be accepted into the buffers, the second discard scheme being different than the first discard scheme; and

discarding a portion of lowest priority traffic based on the first discard scheme or the second discard scheme, the first or second discard scheme determined based on the fixed buffer allocation queue identification or the prioritized fair share queue identification associated with the lowest priority traffic.

2. (previously presented) The method of Claim 1, wherein the step of designating the fixed buffer allocation space includes reserving a semi-permanent portion of the fixed buffer allocation space for the network connections.

3. (currently amended) The method of Claim 1, wherein the step of designating prioritized fair share buffer space further comprises determining a weighting value for each network connection in the network connections, and wherein a first network connection in the network connections having a higher weighting value than a second network connection in the network connections is proportionately allocated a greater amount of the prioritized fair share buffer space.

4. (original) The method of Claim 3, further comprising:  
receiving traffic of a particular network connection;  
determining a particular buffer allocation for the traffic of the particular network connection;  
allocating the traffic of the particular network connection to the particular buffer allocation.

5. (original) The method of Claim 4, wherein the particular buffer allocation includes at least one of:

a portion of the fixed buffer allocation space; and  
a portion of the prioritized fair share buffer space.

6. (original) The method of Claim 1, further comprising prioritizing the prioritized fair share queue identifications to have relative rankings amongst the prioritized fair share queue-identifications.

7. (original) The method of Claim 6, wherein each queue identification is prioritized amongst queue identifications to have 1 of 16 different priority levels.

8. (currently amended) A method of discarding a prioritized fair share of traffic of network connections, the method comprising:

receiving traffic of at least a particular network connection;

filling a portion of a fixed buffer allocation space with traffic of the particular network connection, wherein a buffer in the fixed buffer allocation space is associated with a fixed buffer allocation queue identification, wherein the fixed buffer allocation space is associated with a first discard scheme which determines if the traffic will be accepted into the buffer;

filling a portion of a prioritized fair share buffer space with traffic of the particular network connection, wherein a buffer in the prioritized fair share buffer space is associated with a prioritized fair share queue identification, wherein the prioritized fair share buffer space is associated with a second discard scheme which determines if the traffic will be accepted into the buffer, the second discard scheme being different than the first discard scheme; and

discarding a portion of lowest priority traffic of the particular network connection based on the first discard scheme or the second discard scheme, the first or second discard scheme determined based on the fixed buffer allocation queue identification or the prioritized fair share queue identification associated with the lowest priority traffic.

9. (original) The method of Claim 8, wherein the fixed buffer allocation space is configured to provide a semi-permanent minimum buffer space to each network connection.

10. (original) The method of Claim 8, wherein the fixed buffer space is configured to provide a guaranteed minimum buffer space to each network connection.

11. (original) The method of Claim 8, wherein the shared buffer space is configured to provide a non-guaranteed buffer space to each network connection, and is configured to be shared amongst network connections.

12. (original) The method of Claim 10, wherein each prioritized fair share queue identification includes a relative ranking amongst the prioritized fair share queue identifications.

13. (original) The method of Claim 11, wherein a portion size for each network connection is based upon a weighting value assigned to each network connection.

14. (original) The method of Claim 11, wherein the step of filling a portion of the prioritized fair share buffer space comprises comparing buffer usage of the particular network connection with buffer usages of other network connections to obtain a weighting value for the particular network connection.

15. (original) The method of Claim 8, further comprising:  
receiving traffic of at least one other network connection;  
filling another portion of the fixed buffer allocation space with traffic of the at least one other network connection; and  
filling another portion of the prioritized fair share buffer space with traffic of the at least one other network connection.

16. (original) The method of Claim 15, wherein the traffic of the particular network connection has a lower quality of service value than that of traffic of the at least one other network connection, and wherein the discarding step comprises discarding traffic of the particular network connection.

17. (original) The method of Claim 8, wherein the step of filling the portion. of the prioritized fair share buffer space comprises filling substantially all of the prioritized fair share buffer space, and wherein the discarding step is triggered by the step of filling substantially all of the prioritized fair share buffer space.

18. (currently amended) A computer-readable medium carrying one or more sequences of one or more instructions for discarding a prioritized fair share of traffic of network connections, the one or more sequences of one or more instructions including instructions which,

when executed by one or more processors, cause the one or more processors to perform the steps of:

receiving traffic of at least a particular network connection;

filling a portion of a fixed buffer allocation space with traffic of the particular network connection, wherein a buffer in the fixed buffer allocation space is associated with a fixed buffer allocation queue identification, wherein the fixed buffer allocation space is associated with a first discard scheme which determines if the traffic will be accepted into the buffer;

filling a portion of a prioritized fair share buffer space with traffic of the particular network connection, wherein a buffer in the prioritized fair share buffer space is associated with a prioritized fair share queue identification, wherein the prioritized fair share buffer space is associated with a second discard scheme which determines if the traffic will be accepted into the buffer, the second discard scheme being different than the first discard scheme; and

discarding a portion of lowest priority traffic of the particular network connection based on the first discard scheme or the second discard scheme, the first or second discard scheme determined based on the fixed buffer allocation queue identification or the prioritized fair share queue identification associated with the lowest priority traffic.

19. (original) The computer-readable medium of Claim 18, wherein the fixed buffer allocation space is configured to provide a semi-permanent minimum buffer space to each network connection.

20. (original) The computer-readable medium of Claim 18, wherein the fixed buffer space is configured to provide a guaranteed minimum buffer space to each network connection.

21. (original) The computer-readable medium of Claim 18, wherein the shared buffer space is configured to provide a non-guaranteed buffer space to each network connection, and is configured to be shared amongst network connections.

22. (original) The computer-readable medium of Claim 20, wherein each prioritized fair share queue identification includes a relative ranking amongst the prioritized fair share queue identifications.

23. (original) The computer-readable medium of Claim 21, wherein a portion size for each network connection is based upon a weighting value assigned to each network connection.

24. (original) The computer-readable medium of Claim 21, wherein the step of filling a portion of the prioritized fair share buffer space comprises comparing buffer usage of the particular network connection with buffer usages of other network connections to obtain a weighting value for the particular network connection.

25. (original) The computer-readable medium of Claim 18, wherein the instructions further cause the processor to carry out the steps of:

receiving traffic of at least one other network connection;

filling another portion of the fixed buffer allocation space with traffic of the at least one other network connection; and

filling another portion of the prioritized fair share buffer space with traffic of the at least one other network connection.

26. (original) The computer-readable medium of Claim 25, wherein the traffic of the particular network connection has a lower quality of service value than that of traffic of the at least one other network connection, and wherein the discarding step comprises discarding traffic of the particular network connection.

27. (original) The computer-readable medium of Claim 18, wherein the step of filling the portion of the prioritized fair share buffer space comprises filling substantially all of the prioritized fair share buffer space, and wherein the discarding step is triggered by the step of filling substantially all of the prioritized fair share buffer space.

28. (currently amended) An integrated circuit configured to discard a priority fair share of traffic of network connections, the integrated circuit comprising:

controlling circuitry configured to control operations of:

filling a portion of a fixed buffer allocation space with traffic of the particular network connection, wherein the fixed buffer allocation space is associated with a first discard scheme which determines if the traffic will be accepted into the buffer;

filling a portion of a prioritized fair share buffer space with traffic of the particular network connection, wherein the prioritized fair share buffer space is associated with a second discard scheme which determines if the traffic will be accepted into the buffer, the second discard scheme being different than the first discard scheme; and

discarding a portion of lowest priority traffic of the particular network connection based on the first discard scheme or the second discard scheme, the first or second discard scheme determined based on the fixed buffer allocation queue identification or the prioritized fair share queue identification associated with the lowest priority traffic.

29. (original) The method of Claim 28, wherein the controlling circuitry further includes comparison circuitry configured to compare a priority of the particular network connection with priorities of other network connections to obtain a weighting value for the particular network connection.

30. (original) The integrated circuit of Claim 28, wherein the controlling circuitry is further configured to control operations of:

filling another portion of the fixed buffer allocation space with traffic of at least one other network connection; and

filling another portion of the prioritized fair share buffer space with traffic of the at least one other network connection.

31. (original) The integrated circuit of Claim 28, wherein the traffic of the particular network connection has a lower quality of service value than that of traffic of at least one other network connection, and wherein the controlling circuitry is further configured to control discarding of traffic of the particular network connection.

32. (original) The integrated circuit of Claim 28, wherein the controlling circuitry is further configured to trigger the discard operation when a local buffer is substantially filled, wherein the local buffer includes the fixed buffer allocation space and the reserved buffer space.

33. (original) The integrated circuit of Claim 30, wherein the controlling circuitry is further configured to trigger the discard operation when the prioritized fair share buffer space is substantially filled.

34. (cancelled)

35. (currently amended) A method of allocating memory buffer space for traffic of network connections, the method comprising:

designating fixed buffer allocation space, wherein buffers in the fixed buffer allocation space are associated with fixed buffer allocation queue identifications, and wherein the fixed buffer allocation space is associated with a first discard scheme which determines if the traffic will be accepted into the buffer; and

designating prioritized fair share buffer space, wherein buffers in the prioritized fair share buffer space are associated with prioritized fair share queue identifications, wherein all



of the buffer space is actually allocated to the fixed buffer allocation space, and none of the buffer space is actually allocated to the prioritized fair share buffer space, and wherein the prioritized fair share buffer space is associated with a second discard scheme which determines if the traffic will be accepted into the buffer, the second discard scheme being different than the first discard scheme; and

discarding a portion of lowest priority traffic based on the first discard scheme or the second discard scheme, the first or second discard scheme determined based on the fixed buffer allocation queue identification or the prioritized fair share queue identification associated with the lowest priority traffic.

36. (cancelled)